Treatment of Extracranial Carotid Artery Aneurysms: What is Known and What is Unknown?

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Park and Kim report on a patient with bilateral extracranial carotid artery aneurysms (ECAA) presenting with mild loco-cervical discomfort but no cerebrovascular sequelae.[1] The ECAA diameter was 2.1 cm on one side and 3 cm on the contralateral side but lengthy over 5 cm. The focus of both the case report and the related commentary was on the surgical intervention performed, but the most important question is if this patient needed intervention at all.[2]

Park and Kim report that surgical treatment of ECAAs is required in most cases because of the high risk of fatal complications related to embolisation, rupture, and local compression. The authors refer to literature published nearly two decades ago.

This statement is incorrect for two reasons. Firstly, the risk of any ECAA related symptom (including local cervical compression) is probably much lower than previously considered. Prognosis depends on the aetiological background, with post-cervical dissection aneurysms showing a relatively benign course.[2,3] Secondly, of all symptoms, most are related to local compression, followed by thrombo-embolisation. Rupture of a true ECAA, however, has as far as we are aware, never been reported in the literature.[3]

Park and Kim state that up to two thirds of cases are related to atherosclerosis; however, probably the largest proportion of ECAAs is related to cervical dissection, either spontaneous or post-traumatic.[2–4] Pathological examination can make a clear distinction between atherosclerotic ECAA wall versus post-dissection ECAA.[4] This observation has led to a recently started research program studying vessel wall characteristics to non-invasively predict the risk of ECAA growth over the years.

In the meantime, based on the scarce data available in the literature, an online registry has begun to collect data on patients with ECAA (www.carotidaneurysmregistry.com). The aim of this ongoing international registry is to study the natural course of ECAA and to collect details on interventions for ECAA in a prospective fashion.

Once both the patient and the multidisciplinary team are convinced that intervention is indicated several well described surgical techniques are available. More recently, hybrid interventions using bare metal stents for distally located ECAA were defined,[5] whereas flow dividing stents may be an option for ECAA at the base of the skull.[6]

Overall, the current literature on treatment outcomes in ECAA consists mainly of case reports and small case series with incomplete data and lack of long-term follow-up.[7] There is a lack of natural follow-up data and there is no clear treatment algorithm. The online registry to collect data on patients with ECAA is designed to provide clinical guidance on this unusual pathology.

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